Patent Claims

1. A plug connector for exterior applications, especially for the electrical connection of solar panels, comprised of a plug (16) with a plug housing (14), having at least one contact pin (3) or a contact sleeve (13), and of a coupling (1) with a coupling housing (2) that has at least one contact sleeve (13) or a contact pin (3),

whereby the plug (16) and the contact pin (3) can be plugged at least partially into the coupling (1),

whereby the contact pin (3) and the contact sleeve (13) are each connectable by at least one crimp connection with at least one cable connector (12) of a cable (4),

whereby the plug (16) and the coupling (1) each have a locking part of a locking unit for fixing the plug (16) and the coupling (1) relative to one another, and

whereby on the plug housing (14) and on the coupling housing (2) each respective seal is provided against the outer jacket of the cable (4),

characterized in that

the contact pin (3) and the contact sleeve (13) each have at least one detent hook (7) that, upon insertion of the contact pin (3) and the contact sleeve (13) in the respective plug housing (14) and the coupling housing (2) engages behind a respective shoulder therein.

2. The plug connector for exterior applications according to claim 1 characterized in that the contact pin (3) and the contact sleeve (13) each are formed with two, preferably diametrically oppositely arranged, detent hooks (7) and the shoulder (6) is configured as an annular shoulder.

3. The plug connector according to one of claims 1 or 2 characterized in that the contact pin (3) and the contact sleeve (13) each have a projection (annular projection 8), that the plug housing (14) and the coupling housing (2) each have a constriction, and that after engagement of the detent hook or detent hooks (7) behind the shoulder (6) the projection (annular projection 8) abuts the constriction.

4. The plug connector according to one of the preceding claims characterized in that the construction is configured as an annular bead and the annular shoulder (shoulder 6) is a component of the annular bead (5).

5. The plug connector according to one of the preceding claims characterized in that the plug housing (14) and the coupling housing (2) have a cylindrical enlargement in the region turned toward the cable (4) and in which the seal (9) is set and fixed.

6. The plug connector according to one of the preceding claims characterized in that the seal (9) is adhesively bonded in the plug (14) and coupling housing (2).

7. The plug connector according to one of the preceding claims characterized in the plug housing (14) and the coupling housing (2) are made from plastic and the seal (9) is made in common with the plug housing (14) and the coupling housing (2) in a two component technique.

8. The plug connector according to one of the preceding claims characterized in that the seal (9) on a surface turned toward the cable 4 is provided with circumferential grooves and ribs and forms a kind of labyrinth seal.

9. The plug connector according to one of the preceding claims, characterized in that the plug housing (14) and coupling housing(2) in the region of the seal (9) is provided with at least one longitudinally extending spreading gap or opening.

10. The plug connector according to one of the preceding claims characterized in that the plug housing 14 and the coupling housing 2 are made from a metallic material, preferably a noncorroding metal.

11. The plug connector according to one of the preceding claims characterized in that in the making of the plug housing (14)

and/or the coupling housing (2) of metal, between it and the contact sleeve (13) an insulating body is inserted.

12. The plug connector according to one of the preceding claims characterized in that within the plug (14) or the coupling housing (2) other housings are provided and that at the ends turned away from the cable have sealing rings 10 that correspond to the seals (9) between the plug housing (14) and the coupling housing (2) and the cable (4).

13. The plug connector according to one of the preceding claims characterized in that the locking part of the plug housing (14) or the coupling housing that engages one around the other has eyes (11) at their ends turned away from the cable, preferably formed as two diametrically opposite eyes.

14. The plug connector according to one of the preceding claims according to one of the preceding claims characterized in that the locking part of the plug housing (14) or the coupling housing (2) one of which is received in the other, is provided with eyes (11) locally and spatially corresponding locking hooks (15).

15. A method of making a plug (16) or coupling (1) of a plug connector according to one of the preceding claims characterized in that the cable (4) is fed through the plug housing (14) or the coupling housing (2) and through the seal (9) thereof, that the cable (4) is isolated and the contact pin (3) or the contact sleeve (13) is connected by a crimp pliers with the cable conductor (12) of the cable (4) and that the plug housing (14) or coupling housing (2) is shoved so further in the direction toward the contact sleeve with respect to the cable (4) so that they lock in the plug housing (14) or the coupling housing (2).